What is claimed is:

1. A method for performing repeated quantitative analysis using an FTMS, comprising a plurality of activities comprising:

from at least one predetermined sample source, automatically and repeatedly obtaining a sample;

for each obtained sample, automatically and repeatedly:

providing the sample to an FTMS;

optimizing at least one variable for the FTMS;

acquiring a plurality of outputs from the FTMS;

ascertaining an identity of at least one predominant ionic component of the sample based on the plurality of outputs;

determining a quantity of the at least one predominant ionic component; and

ejecting the at least one predominant ionic component from a detection region of the FTMS.

2. The method of claim 1, further comprising:

determining a number of repetitions for said obtaining activity.

3. The method of claim 1, further comprising:

obtaining a user-chosen number of repetitions for said obtaining activity.

4. The method of claim 1, further comprising:

determining when to cease said obtaining activity.

5. The method of claim 1, further comprising:

determining a number of repetitions for said activities involving the obtained sample.

6. The method of claim 1, further comprising:

    determining when to cease said activities involving the obtained sample.

7. The method of claim 1, said acquiring activity further comprising:

    applying a trapping plate voltage to at least one trapping plate of the FTMS.

8. The method of claim 1, said acquiring activity further comprising:

    measuring the plurality of outputs from the FTMS.

9. The method of claim 1, further comprising:

    transforming the plurality of outputs from time domain to frequency domain.

10. The method of claim 1, further comprising:

    recording the identity of the at least one predominant ionic component of the sample.

11. The method of claim 1, further comprising:

    recording the quantity of the at least one predominant ionic component of the sample.

12. The method of claim 1, further comprising:

    communicating the identity of the at least one predominant ionic component of the sample.

13. The method of claim 1, further comprising:

    communicating the quantity of the at least one predominant ionic component of the sample.

14. The method of claim 1, further comprising:

for each obtained sample, automatically clearing an identity of any previously determined predominant ionic components.

15. The method of claim 1, further comprising:

for each obtained sample, automatically clearing a value of any previously determined ejection voltages.

16. The method of claim 1, wherein said ascertaining activity is based on the plurality of outputs from the FTMS.

17. The method of claim 1, wherein the quantity provided by said determining activity has a relative standard deviation of about 5 percent.

18. The method of claim 1, wherein the quantity provided by said determining activity has a relative standard deviation of about 5 percent at a 99% confidence level.

19. The method of claim 1, wherein the quantity provided by said determining activity has a relative standard deviation of less than about 5 percent at a 99% confidence level.

20. The method of claim 1, wherein said determining activity is based on the plurality of outputs from the FTMS.

21. A method for performing quantitative analysis using an FTMS, comprising:

for a predetermined sample, automatically and repeatedly for a predetermined number of iterations:

optimizing at least one FTMS variable;

acquiring a plurality of FTMS outputs; and

ascertaining an identity of at least one predominant ionic
component of the sample based on the plurality of outputs; and

determining a quantity of the at least one predominant ionic
component; and

ejecting the at least one predominant ionic component from a
detection region of the FTMS.

22. A method for performing quantitative analysis using an FTMS, comprising:

for a predetermined sample, automatically:

optimizing at least one FTMS variable;

acquiring a plurality of FTMS outputs; and

ascertaining an identity of each of a plurality of ionic components
of the sample based on the plurality of outputs; and

determining a quantity of each of the plurality of ionic
components.

23. A method for performing quantitative analysis using an FTMS, comprising:

for a predetermined sample, automatically:

optimizing at least one FTMS variable;

acquiring a plurality of FTMS outputs; and

ascertaining an identity of at least one of a plurality of ionic
components of the sample based on the plurality of outputs; and

determining a quantity of the at least one of the plurality of ionic
components.

24. A machine-readable medium storing instructions for activities comprising:

for a predetermined sample, automatically:

optimizing at least one FTMS variable;

acquiring a plurality of FTMS outputs; and

ascertaining an identity of each of a plurality of ionic components of the sample based on the plurality of outputs; and

determining a quantity of each of the plurality of ionic components.